

Title (en)  
PISTON DEVICE FOR INTERNAL COMBUSTION ENGINE

Title (de)  
KOLBENVORRICHTUNG FÜR VERBRENNUNGSMOTOR

Title (fr)  
DISPOSITIF PISTON POUR MOTEUR COMBUSTION INTERN E

Publication  
**EP 1719901 A4 20090902 (EN)**

Application  
**EP 05710093 A 20050210**

Priority  
• JP 2005002041 W 20050210  
• JP 2004035357 A 20040212

Abstract (en)  
[origin: EP1719901A1] A top ring is designed to have a gas seal function and an oil control function in order to realize approximately the same amount of oil consumption and brow-by gas as those realized by three rings, by using the top ring only. A piston assembly includes a piston body and a piston ring having a U-shaped cross section. The piston body has a top land portion and a ring groove formed on its periphery. The piston ring includes an upper leg portion, a lower leg portion, and a base portion connecting the upper and lower leg portions, and is attached to the top land portion of the piston body. An axial length from a boundary of the base portion of the piston ring and the upper leg portion to a lower surface of the lower leg portion is set to be larger than an axial length from an upper surface of the top land portion of the piston body to a lower surface of the ring groove to which the lower leg portion is fitted. Alternatively, axial grooves are provided on a thrust side of the top land portion. Alternatively, a V-shaped annular groove is provided in a second land portion of the piston body. The piston ring may include an upper periphery having a BF (barrel face) shape and a lower periphery formed as a straight or tapered contact face.

IPC 8 full level  
**F02F 3/00** (2006.01); **F02F 5/00** (2006.01); **F16J 9/00** (2006.01); **F16J 9/20** (2006.01)

CPC (source: EP US)  
**F02F 3/00** (2013.01 - EP US); **F16J 9/20** (2013.01 - EP US); **F16J 15/326** (2013.01 - EP US)

Citation (search report)  
• [X] US 2566603 A 19510904 - KANTZOW DYKES PAUL DE  
• [X] GB 808871 A 19590211 - GOETZEWERKE  
• [XY] US 3901131 A 19750826 - PRASSE HERBERT F  
• [Y] GB 2028464 A 19800305 - MASCHF AUGSBURG NUERNBERG AG  
• [Y] US 6347575 B1 20020219 - BOOHER BENJAMIN V [US]  
• See references of WO 2005078268A1

Cited by  
CN103993978A; CN104786037A

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DE

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**EP 1719901 A1 20061108; EP 1719901 A4 20090902**; JP 2005226522 A 20050825; TW 200530525 A 20050916; US 2007272078 A1 20071129; WO 2005078268 A1 20050825

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**EP 05710093 A 20050210**; JP 2004035357 A 20040212; JP 2005002041 W 20050210; TW 94103464 A 20050203; US 59774505 A 20050121